

Dr. W. Hamlin Emory, M.D.

Applying Neuroscience to Neurophysiology

Brain1st

To: Gary Marcus, Op-Ed Contributor

Re: "The Trouble With Brain Science," July 11, 2014

Dear Dr. Marcus,

There are historic reasons why too little has been done to improve the treatment of persistent mental illnesses. In the late nineteenth century, having no technology to distinguish brain differences among patients, psychiatry separated from neurology and began to use psychological concepts to substitute for unknown neurophysiologic interactions; however, terms such as depression, bipolar, anxiety, anorexia, addiction, dependency, etc. are descriptions and do not identify the presence or type of variance in a person's physiology or neurophysiology.

In recent years, neuroscientists using EEG-linked fMRI have detected the brain's instinctive circuits which are active 24/7, monitored their interactions and found that they consume over 50% of the brain's energy. With dynamics and kinetics that resemble homeostatic physiology, the logical inference is that persistent mental illnesses are likely caused by failing homeostatic circuits which are the primary work of the brain.

A good model of brain science ought to be based on homeostasis, the automatic organizing framework of complex physiology. These complex, counterintuitive processes described by Walter Cannon in 1929 have not held their rightful place in everyday medicine or psychiatry.

In addition, the brain is the only organ that cannot be studied in isolation from the other physical systems, because other systems give clues about brain function. Monitoring and measuring instinctive brain and body interactions is essential to achieving brain and body harmony or physical unity. This approach could be called clinical neuroscience. In his seminal 1929 article on homeostasis, Walter Cannon described the reciprocal nature of the physical systems and the proper resting state condition for assessing a person's automatic nervous system. Variations in a person's automatic systems can be measured, monitored and compared with age average norms.

Common inherited differences in brain activity are currently unrecognized in everyday medicine and psychiatry. This is tragic, because so many persons become ill within the first two decades of life and remain permanently disabled. Inclusive physical monitoring with application of EEG/QEEG data usually results in a salutary outcome. This is because EEG contains sufficient data to help doctors learn from experience and improve patients' therapeutic outcomes.

The electro-encephalogram (EEG) was the first tool to show variations in the regular brainwaves among healthy and unwell persons. Available since the 1930s, EEG senses the continuous actions of cortical neurons from scalp electrodes and a person's brainwave pattern is a stable neurophysiologic trait. Psychiatric and psychological EEG research has tried and failed to link differences in the regular brainwaves with behavior. Computer technology in the 1980s allowed quantification of the EEG signal (QEEG) and provided brainwave features that are not accessible by visual inspection. Subsequent psychiatric and psychological research has also tried and failed to link QEEG differences with particular behavioral disorders as classified by the DSM.

Medications that enter the brain are neuro-active. They alter a person's psyche as a consequence of changing brain physiology. Since the goal of medical treatment is to restore or improve physiology, medication for a neurodevelopmental condition should be selected to support the brain's impaired homeostatic circuits, improve neurophysiology, generate brain-body balance (homeostasis) and end a person's distressful symptoms.

Sincerely,

Hamlin Emory, M.D.

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Hamlin Emory, M.D. is a pioneer in the integration of physical findings with functional brain measures that are not accessible by traditional physical or psychological assessment. He applies an inclusive physical systems model, an EEG/QEEG medication correlation database begun in 1987 and the organizing framework of homeostasis to bring each patient into homeostasis or brain-body balance. A leading practitioner of Clinical Neuroscience and Neuro-Integrative Medicine, he practices in the Century City area of Los Angeles. For more information, log onto www.dremory.com. To schedule a consult, contact office@dremory.com or call (310)277-7711.